

Message Text

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PAGE 01 BRASIL 05148 01 OF 02 011423Z
ACTION OES-07

INFO OCT-01 ARA-10 EUR-12 ISO-00 SOE-02 AID-05 CEA-01
CIAE-00 COME-00 DODE-00 EB-08 H-01 INR-10 INT-05
L-03 NSAE-00 NSC-05 OMB-01 PM-05 ICA-11 SP-02
SS-15 STR-07 TRSE-00 ACDA-12 /123 W
-----130946 011439Z /44

R 301905Z JUN 78
FM AMEMBASSY BRASILIA
TO SECSTATE WASHDC 8105
INFO USDOE WASHDC
AMEMBASSY BUENOS AIRES
AMEMBASSY VIENNA
AMEMBASSY BONN

LIMITED OFFICIAL USE SECTION 1 OF 2 BRASILIA 05148

VIENNA FOR USIAEA

EO 11652: N/A
TAGS: ENRG, TECH, PARM, BR
SUBJ: AMBASSADOR SMITH'S VISIT TO BRAZIL - HIGHLIGHTS OF
UEKI BRIEFING

REF: BRASILIA 4662

1. MINISTER OF MINES AND ENERGY SHIGEAKI UEKI BRIEFED AMBASSADOR
SMITH AND GROUP FOR ONE HOUR ON JUNE 13 ON GOB ENERGY POLICY
AND PROGRAM, USING 1977 MME DOCUMENT "NATIONAL ENERGY BALANCE"
AS BASIS. (COMMENT. THIS DOCUMENT AVAILABLE AT BRAZIL DESK
AT OES - 1978 UPDATE EXPECTED TO BE RELEASED IN JULY. END
COMMENT).

2. BASIC ENERGY DATA ANALYSIS FOR DECADE 1966-76 AND
PROJECTIONS TO 1986:

A. PRIMARY ENERGY CONSUMPTION IN MILLIONS OF TONS
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PAGE 02 BRASIL 05148 01 OF 02 011423Z

PETROLEUM EQUIVALENT (ASSUMING ANNUAL AVERAGE GDP GROWTH
OF 8 PERCENT)
1966 - 49.1 TPE
ACTUAL AVERAGE ENERGY GROWTH OF 7.3 PERCENT PER YEAR
1976 - 99 TPE.
PREDICTED AVERAGE ENERGY OF 6.9 PERCENT PER YEAR
1986 - 193 TPE

B. PRIMARY ENERGY SOURCE DISTRIBUTION:

FOSSIL INCLUDES PETROLEUM COAL, SHALE OIL, AND NATURAL GAS.
SOLAR INCLUDES RENEWABLE, INDIRECT SOURCES OF HYDROPOWER
AND FUEL FROM BIOMASS.

	1966	1976	1986
FOSSIL.....	36.8	47.2	46
SOLAR.....	63.2	52.8	50
NUCLEAR.....	--	--	4.0 (PERCENT)

C. PRIMARY ENERGY CONSUMPTION DISTRIBUTION:

	1966	1976	1986
TRANSPORT	32.4	43.0	40
ELECTRICITY	19.3	25.6	38
OTHER	48.3	31.4	22

TRANSPORT CONSUMPTION GREW 10.3 PERCENT PER YEAR IN DECADE
66-76 BUT IS EXPECTED TO SLOW TO 5.2 PERCENT PER YEAR IN DECADE
76-86 - GASOLINE CONSUMPTION HAS REMAINED APPROX. CONSTANT
DURING 73/77 PERIOD BECAUSE OF POLICY MEASURES BUT DIESEL
USE GREW APPROX 11 PER CENT PER YEAR IN SAME PERIOD.
ELECTRICITY CONSUMPTION GREW 11 PERCENT PER YEAR IN 66/76
DECADE AND IS EXPECTED TO CONTINUE THIS GROWTH RATE.

D. ELECTRICITY CAPACITY IN GIGAWATTS AND GENERATION
GENERATION AVERAGES APPROX 50 PERCENT OF MAXIMUM INSTALLED
CAPACITY):

	1966	1976	1986
HYDRO	5.5 GW	18.4GW	50GW
THERMAL	2.0GW	3.4GW	5GW

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PAGE 03 BRASIL 05148 01 OF 02 011423Z

NUCLEAR	--	--	4.4GW
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IN 1966, GENERATION WAS 85 PERCENT HYDRO AND 15 PERCENT THERMAL
2/3 OIL 1/3 COAL.

IN 1976, GENERATION WAS 92 PERCENT HYDRO AND 8 PERCENT THERMAL
2/3 OIL, 1/3 COAL).

IN 1986 GENERATION IS EXPECTED TO BE 85 PERCENT HYDRO, 10
PERCENT NUCLEAR, AND 5 PERCENT THERMAL (ALL COAL)

3. MOST SIGNIFICANT UEKI COMMENTS:

A. PETROLEUM. RATIO, OF OIL CONSUMPTION PERCENT GROWTH
TO GDP PERCENT GROWTH WAS 1.4 IN PAST DECADE, NOW REDUCED TO
0.7. BRAZIL'S RESERVE WAS LESS THAN 100 MILLION TONS - OFF-
SHORE EXPLORATION BEGUN IN 1971 HAS DEVELOPED 15 FIELDS
PLUS 50 OTHER GOOD STRUCTURES (ONE FIELD OFF MOUTH OF AMAZON
RIVER BUT VERY DIFFICULT ARE TO DEVELOP) PETROBRAS SPEND
APPROX 3 BILLION ON EXPLORATION IN AMAZON BASIN OVER 25 YEARS
WITH MEAGER RESULTS - GEOLOGY IS BAD FOR OIL DEPOSIT BECAUSE OF
BASALT INTRUSION. NATURAL GAS SUPPLY WILL BE EXTENDED
BY ADDING 20-30 PERCENT BIOGAS FROM WASTE PROCESSING. SELF-
SUFFICIENCY IN OIL, EVEN WITH EXPANSION OF RISK-CONTRACTING
IS DOUBTFUL BUT

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PAGE 01 BRASIL 05148 02 OF 02 011432Z

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LIMITED OFFICIAL USE SECTION 2 OF 2 BRASILIA 5148

VIENNA FOR USIAEA

CONSERVATIVE PRODUCTION GOAL OF 45 MILLION TONS PER YEAR BY 1986 MAY BE ATTAINABLE (1986 DEMAND ESTIMATE IS 71 MILLION TONS FOR ENERGY PURPOSES AND 9 MILLION TONS FOR NON-ENERGY USE).

B. ELECTRICITY. INSTALLED CAPACITY BY 1990 MAY 90 GW, INCLUDING 10GW NUCLEAR. GOB AIMING AT 90 PERCENT HYDROPOWER 10PERCENT THERMAL GENERATION MIX UNTIL NATIONAL LARGE-SCALE HYDRO RESOURCES (ESTIMATED AT APPROX 120 GW OF TECHNICALLY EVALUATED, EXPLOITED POWER) ARE FULLY UTILIZED. COAL THERMAL MAY GROW (WHICH TECHNOLOGICAL ADVANCES) BEYOND 5 GW PLANNED FOR 1986, BUT WILL BE LIMITED TO EXTREME SOUTHERN BRAZIL WHERE MODEST-SIZED, LOW GRADE COAL DEPOSITS EXISTS. BY SOME TIME IN 1995-2000 PERIOD, ALL NEW GENERATING CAPACITY WILL BE NUCLEAR OR OTHER ADVANCED NON-HYDRO TECHNOLOGY. HYDRO/THERMAL MIX IS PRESENTLY REQUIRED EVEN WITH NATIONALLY INTERCONNECTED SYSTEM BECAUSE BRAZIL IS COUNTRY OF SEASONAL RAINFALL - 6 MONTHS WET AND 6 DRY OVER ENTIRE COUNTRY AT APPROX SAME TIME.

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PAGE 02 BRASIL 05148 02 OF 02 011432Z

(COMMENT. THIS STATEMENT IS MORE ACCURATE FOR EXISTING HYDROPOWER THAN ALL POSSIBLE FUTURE DEVELOPMENTS. END COMMENT.) THERMAL CAPACITY IN EXCESS OF NORMAL USE IS ALSO REQUIRED TO DEAL WITH DRY YEAR ABNORMALITIES (SUCH AS 1978).

C. ALCOHOL. PRESENT PRODUCTION, PRINCIPALLY FROM CANE, OF ETHANOL IS APPROX 1.6 MILLION TPE PER YEAR UTILIZED AS MIXTURE OF 20 PERCENT ANHYDROUS ETHANOL/80 PERCENT GASOLINE. PRODUCTION IS EXPECTED TO DOUBLE BY 1981 AND CONTINUE TO INCREASE WITH CONTRIBUTIONS FROM MANIOC, SORGHUM AND OTHER CROPS, PRESENT PRODUCTION COSTS ESTIMATES ARE APPROX \$25 PER BARREL (1/2 AGRICULTURAL AND 1/2 INDUSTRIAL), BUT 30 PERCENT COST REDUCTION SHOULD BE ATTAINABLE. ALCOHOL IS MORE COMPETITIVE WITH PETROLEUM AS FEED STOCK FOR PETROCHEMICAL (ETHYLENE) USE. LARGE-SCALE EXPANSION OF BRAZILIAN SUGAR AGROINDUSTRY WILL OFFER ALTERNATIVES OF SUPPLYING WORLD SUGAR MARKET IF PRICE IS FAVORABLE OR PRODUCING ETHANOL FOR PETROLEUM IMPORT SUBSTITUTION IF SUGAR PRICES ARE LOW.

D. TECHNOLOGY POLICY. IN PAST, GOB COMMITTED "ERRORS" OF SELECTING LARGE MIX OF EQUIPMENT AND TECHNOLOGIES FROM MANY SUPPLIERS IN FOR EXAMPLE, OIL REFINING AND HYDROELECTRIC GENERATION AREAS. GOB INTENDS NOT TO REPEAT THIS IN NUCLEAR OR LONG DISTANCE TRANSMISSION FIELD - ONE SUPPLIESR'S EQUIPMENT AND TECHNOLOGY WILL EB SELECTED ON BASES OF QUALITY, PRICE, WILLINGNESS TO TRANSFER TECHNOLOGY AND PRODUCTION TO BRAZIL, ETC. IN NEAR TERM BRAZIL WILL NOT TRY TO DEVELOP INDIGENOUS TECHNOLOGY BUT USE ITS MARKET STRENCGH TO CONCETRATE ON TECHNOLOGY IMPORTATION, ADAPTATION, NATIONALIZATION, AND PRODUCTION OF ADAPTED EQUIPMENT IN BRAZIL FOR DOMESTIC USE AND EXPORT TO OTHER SOUTHERN HEMISPHERE DEVELOPING COUNTRIES. IN NUCLEAR AREA BRAZIL HAS FOUND SUCH PARTNER IN WEST GERMANY AND KWU COMPANY, AND US SHOULD EXPECT NO FUTURE COMMERCIAL NUCLEAR OPPORTUNITIES IN BRAZIL.

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PAGE 03 BRASIL 05148 02 OF 02 011432Z

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Message Attributes

Automatic Decaptioning: X
Capture Date: 01 jan 1994
Channel Indicators: n/a
Current Classification: UNCLASSIFIED
Concepts: ENERGY, POLICIES, DATA, VISITS, DEBRIEFINGS
Control Number: n/a
Copy: SINGLE
Draft Date: 30 jun 1978
Decaption Date: 01 jan 1960
Decaption Note:
Disposition Action: RELEASED
Disposition Approved on Date:
Disposition Case Number: n/a
Disposition Comment: 25 YEAR REVIEW
Disposition Date: 20 Mar 2014
Disposition Event:
Disposition History: n/a
Disposition Reason:
Disposition Remarks:
Document Number: 1978BRASIL05148
Document Source: CORE
Document Unique ID: 00
Drafter: n/a
Enclosure: n/a
Executive Order: N/A
Errors: N/A
Expiration:
Film Number: D780272-0650
Format: TEL
From: BRASILIA
Handling Restrictions: n/a
Image Path:
ISecure: 1
Legacy Key: link1978/newtext/t1978065/aaaaadro.tel
Line Count: 209
Litigation Code IDs:
Litigation Codes:
Litigation History:
Locator: TEXT ON-LINE, ON MICROFILM
Message ID: c7bb5087-c288-dd11-92da-001cc4696bcc
Office: ACTION OES
Original Classification: LIMITED OFFICIAL USE
Original Handling Restrictions: n/a
Original Previous Classification: n/a
Original Previous Handling Restrictions: n/a
Page Count: 4
Previous Channel Indicators: n/a
Previous Classification: LIMITED OFFICIAL USE
Previous Handling Restrictions: n/a
Reference: 78 BRASILIA 4662
Retention: 0
Review Action: RELEASED, APPROVED
Review Content Flags:
Review Date: 05 may 2005
Review Event:
Review Exemptions: n/a
Review Media Identifier:
Review Release Date: N/A
Review Release Event: n/a
Review Transfer Date:
Review Withdrawn Fields: n/a
SAS ID: 2317448
Secure: OPEN
Status: NATIVE
Subject: AMBASSADOR SMITH'S VISIT TO BRAZIL - HIGHLIGHTS OF UEKI BRIEFING
TAGS: ENRG, TECH, PARM, OVIP, BR, (SMITH, GERALD C)
To: STATE
Type: TE
vdkgvwkey: odb://SAS/SAS.dbo.SAS_Docs/c7bb5087-c288-dd11-92da-001cc4696bcc
Review Markings:
Sheryl P. Walter
Declassified/Released
US Department of State
EO Systematic Review
20 Mar 2014
Markings: Sheryl P. Walter Declassified/Released US Department of State EO Systematic Review 20 Mar 2014